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ABSTRACT

This edition of the Role of Market Forces program note suggests empirical and descriptive analyses required to complement new areas of health policy emphasis and direction. Eight areas and related questions involving health economics are outlined: (1) rural health care; (2) medical malpractice and insurance; (3) supply, productivity, and reimbursement of hospitals; (4) health care technology assessment; (5) alternative delivery systems; (6) health care and the elderly; (7) cost and financing issues of acquired immunodeficiency syndrome (AIDS); and (8) consumer-oriented health care. Some questions, such as those concerning uncompensated or indigent care and the role of the physician in a changing health care system, are pertinent to each of the eight areas and are found throughout the program note. Information on application procedures and review are provided as the concluding sections of the program note. Selected references are included for each of the eight areas of health economics. (NB)

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THE ROLE OF MARKET FORCES IN THE DELIVERY OF HEALTH CARE: ISSUES FOR RESEARCH

April 1988

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THE ROLE OF MARKET FORCES IN THE DELIVERY OF HEALTH CARE: ISSUES FOR RESEARCH

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Introduction

The first edition of the Role of Market Forces (RMF) program note was published in October 1984. Research questions describing changes in the health care system were outlined in that issue. Emphasis was placed on health services research to assess new market-oriented approaches to greater cost consciousness and to measure the effects of increased competition on the organization, financing, and distribution of health care services.

As a result of the first RMF program note, several projects were funded by the National Center for Health Services Research and Health Care Technology Assessment (NCHSR). These include studies that investigate the role of adverse selection in the choice of health plan, the cost of capital in hospitals, the use of services by the elderly in a capitated health plan, the evolution of alternative delivery systems, and the effect of advertised physician fee information on the consumer's choice of provider.

This edition of the RMF program note identifies several new researchable issues. It is not meant to be a complete listing, but is intended to suggest empirical and descriptive analyses required to complement new areas of health policy emphasis and direction.

Eight areas and related questions involving health economics are outlined below. Some of the questions, such as those concerning uncompensated or indigent care and the role of the physician in a changing health care system, are pertinent to each of the eight areas and are found throughout this program note. Several of the issues are among those considered especially critical by the Secretary of the Department of Health and Human Services (DHHS). Information on application procedures and review, and selected references, are provided as the concluding sections of this program note.

The areas addressed in this program note are (not necessarily in order of priority):

- Rural Health Care
- Medical Malpractice and Insurance
- Supply, Productivity, and Reimbursement of Hospitals
- Health Care Technology Assessment
- Alternative Delivery Systems
- Health Care and the Elderly
- Cost and Financing Issues of AIDS
- Consumer-Oriented Health Care

Rural Health Care

There are major differences in the organization and use of health care resources between rural and urban areas. The number of physicians per capita, the number of hospitals and other institutional facilities per square mile, the extent of public control of health facilities, the travel time to obtain health care services, and the use and complexity of health care services differ between rural and urban areas. The population served by rural hospitals also is different from that treated in urban hospitals. Rural hospital patients are older, are less likely to be on Medicaid or to be self-paying, and are admitted with diagnoses that require longer hospital stays on average.

The Nation has experienced rapid growth in the elderly population. Approximately 11 percent of the population in the United States in 1986 was 65 years of age and older. In contrast, persons 65 years and over comprised at least 14 percent of the rural population in 1986. Out-migration of the younger generation and lower fertility rates have resulted in a high proportion of elderly in agricultural areas (e.g., in Iowa, Kansas, Missouri, Nebraska, and South Dakota). These demographic changes, along with adverse economic conditions, have eroded the tax base used to support community health care facilities, altered the casemix which these facilities treat, and increased the amount of uncompensated care provided by rural hospitals.

The size of the tax base is particularly important to rural hospitals since these hospitals are more likely to be publicly controlled than are urban hospitals. Forty-five percent of all rural hospitals are publicly controlled in contrast to 17 percent of urban hospitals.

Almost half of the hospitals in the United States are rural (i.e., outside a Standard Metropolitan Statistical Area or SMSA). Because of lower staffing levels and salaries and fewer facilities and services,

rural hospitals have lower expenses per patient day and per admission than urban hospitals. Occupancy rates in rural hospitals are lower than in urban hospitals because rural hospitals are smaller and have proportionally greater daily variation in the number of patients admitted. Rural hospitals are more likely than urban hospitals to maintain basic medical services such as emergency departments, obstetrical care, pediatric units, and newborn nurseries. They are less likely to provide technologically sophisticated services such as magnetic resonance imaging and organ transplants; they are more likely to have long-term care units.

The implementation of Medicare's prospective payment system for hospital care and increased emphasis on cost control by business and third-party payers have resulted in greater cost sensitivity for all hospitals. It may be more difficult for rural hospitals to adapt to cost constraints (e.g., by shifting away from acute care services to ambulatory and home health care) because they possess fewer resources in terms of marketing, strategic planning, and data processing.

The rural hospital may be the sole health care provider in its community. The hospital is one of the largest employers in rural areas, generating disposable income for other local business and suppliers, and providing amenities desired by local employees. Its closure could seriously affect access to health care by increasing the distance traveled and by making the area less attractive to physicians. Between 1980 and 1985, 6 of the 85 rural counties that experienced closure of a community hospital had no hospitals of any type after the closure. There was a sharp increase in hospital closures in 1986, with 37 rural hospitals closing compared with 21 hospitals in 1985.

Several organizations currently are directing attention to researchable issues concerning the delivery and use of rural health care services. The Health Care Financing Administration (HCFA), The Robert Wood Johnson Foundation, and the American Hospital Association (AHA) have supported research on the use of swing-beds for meeting the subacute and long-term care needs of hospitalized patients. The W. K. Kellogg Foundation has funded major demonstrations of ways to improve the delivery of acute and chronic health care services in rural areas. The National Institute of Mental Health is supporting a Rural Mental Health Demonstration Program to improve the delivery of services for rural residents experiencing emotional and behavioral problems or mental disorders. The new Office of Rural Health Policy (Health Resources and Services Administration, DHHS) expects to fund several Rural Health Research Centers to conduct policy research.

In December 1987, NCHSR and HCFA supported a congressionally mandated conference organized by the National Rural Health Care Association and the Foundation for Health Services Research to develop an agenda for health services research on rural health care problems. This RMF program note includes some of the recommendations of the conferees for research on the costs and financing of rural health care; these and other questions will be amplified in the published proceedings of the conference. Further, Congress emphasized the need to conduct studies on (1) the future of the rural hospital; (2) long-term health care for the rural elderly; (3) hospital care for the rural poor and uninsured; and (4) alternative health care delivery systems and managed health care in rural areas.

Health services research on rural health care issues should use multivariate analyses where appropriate and be sensitive to the various levels of data disaggregation required to understand intrarural differences. Investigators are encouraged to explore the availability of data collected by State and local health officials.

NCHSR is interested in studies that will examine the following questions:

- What are the characteristics of rural hospitals that are sole providers of inpatient care in their communities? An analysis of the differences in service and patient mix, organization and management, and financial performance between sole commmunity providers and other rural hospitals located in a more competitive environment would be useful.

- What is the impact of sole provider rural hospitals on the pricing, costs, and quality of health care services in their service area?

- What are the effects of adverse economic conditions in agriculture and mining on the fiscal viability of rural hospitals? How have such conditions affected the way in which the health care market provides care to people in rural areas? How have changes in reimbursement and demographic patterns and Federal/State rules concerning certification, tax law, and eligibility under Medicare and Medicaid affected the financial performance of rural hospitals?

- Has there been a shift in the acquisition strategy of multihospital systems with respect to rural hospitals? Are there certain characteristics that make rural hospitals more or less attractive to multihospital systems? Are there differences in service mix, casemix, quality of care, and uncompensated care provided between rural hospitals which are members of hospital chains and those which are not? How have other operating arrangements, such as hospital alliances, the purchase of hospitals by small proprietary firms, and management contracts, affected the fiscal viability and service delivery of rural hospitals? What is the effect on the role of trustees of rural hospitals when acquisitions or mergers occur?

- What is the extent of medical practice variation within and between rural areas and between urban and rural areas? What are the cost and outcome consequences of such variation? Are there differences in the use of specific services and in health outcomes for particular medical problems treated by rural versus urban health care providers?

- How do various socioeconomic and demographic factors (e.g., employment, age distribution, and migration pattern) affect the access to health care services, the use of services, and the extent of coverage and comprehensiveness of health insurance in rural areas?

- In rural counties where the sole hospital provider has closed, what changes in the health care delivery system have occurred? What effect did closure have on the health status of the community members and on the outcomes of episodes of illness? What effect did closure have on the economic base of the community (employment, business revenue, and taxes) and over what period of time?

- There are many factors that affect the supply of physicians, nurses, and other health professionals in rural communities. These factors include the demand for services provided by these health care professionals, the availability of continuing education, professional concerns with quality assurance, cultural and lifestyle preferences, income expectations, and State laws and regulations dealing with the use and licensure of health care personnel. What is the relative contribution of each factor in affecting the mix of medical personnel in rural practice? How are variations in the mix of medical personnel related to variations in the cost, quality, and outcome of health care services in rural areas?

- Are there certain medical and informational technologies (e.g., telecommunications) and/or organizational forms of health care delivery (e.g., use of contracted services, home care, itinerant surgery, and emergicenter) that could deal more efficiently with maternal and child health care problems, chronic illness, occupationally related disability, and the emergency care, long-term care, and indigent care needs of the rural population?

- What are the organizational, performance, and market characteristics of financially sound rural hospitals compared to those of hospitals that have closed? What strategies have been employed by rural providers to maintain or improve their financial viability? What effect do various community, licensure, and reimbursement factors have on the nature and success of these strategies? Are there lessons to be learned from financially sound hospitals that may help financially troubled rural hospitals?

- What has been the impact of the increased costs of malpractice liability insurance on the practice patterns of providers in rural areas?

- What are the relationships between rural hospitals and HMOs? Has HMO affiliation affected the census and revenues of rural hospitals? What is the effect of rural managed health care systems on the costs of health care services in the rural community?

Medical Malpractice and Insurance

In the mid-1970s, there was a crisis concerning the availability of medical malpractice insurance. In the 1980s, the crisis is one of steeply rising premiums for malpractice insurance. Policies on the reform of malpractice insurance vary considerably. The five most popular reforms include caps or limits on awards for noneconomic damages ("pain and suffering"); abolition of collateral source rules which allowed plaintiffs to collect from both insurance companies and defendants without offset; payment of awards over a scheduled time frame rather than as a lump sum ("structured award payments"); abolition of joint/several liability laws that permitted recovery of damages from any defendant in a lawsuit if any other defendant couldn't pay; and limits on legal fees. However, the impact of these and other tort reforms on the level or rate of increase of malpractice insurance premiums has not been ascertained.

Discussions of the crisis in medical malpractice insurance are found in recent reports by the General Accounting Office and the Alpha Center in Washington, DC. In addition, The Robert Wood Johnson Foundation has a Medical Malpractice Program to support research and demonstration projects to study negligent medical care and the effectiveness of legal, insurance, and medical malpractice reform. The Department of Health and Human Services recently issued the *Report of the Task Force on Medical Liability and Malpractice*. This contains an overview of significant research issues which merit study. Examples of these and other questions which NCHSR is particularly interested in supporting include:

- What is the relationship between variations in medical practice, adverse medical outcomes, and the extent and nature of malpractice claims and awards for specific procedures and/or medical conditions?
- Do risk-management programs in hospital and nonhospital settings reduce the occurrence of avoidable adverse medical outcomes and, in turn, the frequency and severity of medical malpractice claims?
- What is the effect of changes in medical technology on the nature and extent of adverse medical outcomes and the frequency and severity of medical malpractice claims?
- How have increased malpractice exposure and costs affected the specialty choices, location decisions, and practice patterns of physician and nonphysician providers of health care services?
- What factors account for differences in the extent and nature of malpractice claims and awards associated with medical practice in fee-for-service versus prepaid or capitated health care delivery settings?
- What is the contribution of defensive medicine associated with the fear of legal liability to the use of unnecessary services and the costs of delivering health care? How does this contribution compare with the costs of overutilization associated with cost reimbursement?
- Have tort reforms (e.g., limits to malpractice awards) and alternatives to tort litigation (e.g., binding arbitration) reduced the number and costs of medical malpractice claims?

Supply, Productivity, and Reimbursement of Hospitals

Medicare's prospective payment system (PPS) pays on a per case basis. In response to PPS, it was anticipated that hospitals would shorten their average length of stay, increase their number of admissions, improve their coding of cases to increase reimbursement, provide fewer unnecessary services, specialize in treating certain types of patients, adopt cost-reducing technologies, reduce excess capacity, and improve the financial management of the hospital.

Data from the American Hospital Association show that the average length of stay for all patients rose by 0.7 percent in 1986. This was the first increase since 1981. The number of inpatient admissions fell by 4.0 percent in 1984, 4.6 percent in 1985, and 2.1 percent in 1986. Outpatient visits continued to increase in 1986 by 8.3 percent, after increasing by 4.8 percent in 1985. Hospital profit margins fell sharply from 1.5 percent in 1985 to 0.7 percent in 1986. Data from the Prospective Payment Assess-

ment Commission show that hospital profits from Medicare patients were an estimated 2 percent in 1987 and were expected to be negative in 1988.

In addition to PPS, other changes in the delivery of health care have affected the supply and productivity of hospitals. The rate of diffusion of competitive systems and health maintenance organizations (HMOs) has accelerated. Enrollment in HMOs rose about 25 percent in 1985, reaching 28.8 million by September 1987; enrollment in preferred provider organizations (PPOs) increased fourfold between December 1984 and June 1985. Many States have obtained freedom of choice waivers from Medicaid that limit the choice of providers for Medicaid recipients. The number of hospitals belonging to chains continues to increase. Many employers are underwriting health insurance and using insurance companies for administrative services only. Several costly new technologies are rapidly diffusing in both inpatient and ambulatory settings (e.g., magnetic resonance imaging and extracorporeal shock wave lithotripsy). It is difficult to isolate and estimate the impact of any one of these changes because they are occurring simultaneously.

Policies to foster competition would benefit from more detailed knowledge of how the health care market reacts and adjusts to different incentives. In this regard, HCFA's research agenda encompasses demonstrations and evaluations that are consistent with the specific programmatic needs of Medicare. As part of its legislative mandate and its mission to support general health services research, NCHSR also is interested in research questions that pertain to the organization, structure, and performance of hospitals in a more competitive environment.

NCHSR encourages studies that address the following:

- How does increased competition in the private sector, through patient cost sharing or growth in alternative delivery systems, affect cross subsidies between publicly and privately financed care and between private paying patients and private nonpaying patients? Previous research has found evidence that cross subsidization exists between these groups of patients. Current health policy changes that reduce the Federal role in health financing increase the importance of research to estimate cross subsidies. Reimbursement for care provided to hospitalized patients under the Medicare and Medicaid programs has been based on reasonable costs. Cross subsidies from private, charge-paying patients to public patients are created when hospitals raise charges to private patients above those of public patients to recoup revenue losses or to earn larger profits. The extent of this revenue shift under PPS and the competitive effect of corporate and PPO negotiations for reduced prices are researchable issues. Another unresolved question is the extent of cost shifting between patients covered by different payers. Theoretical work is required to explain hospital cost shifting behavior, and empirical evidence on cost shifting is needed.

- Hospitals faced with competitive changes in the private sector may change the mix of services available to public patients. With a reduction in the ability of hospitals to cross subsidize, each patient group will increasingly have to bear its own share of the cost, unless explicit subsidies are available. To what extent are Medicaid program payments to hospitals at competitive levels? What have been hospital responses to population subgroups without insurance coverage? If hospitals cannot discriminate between the poor with and without Medicaid coverage, do they tend to choose to serve all or none of the poor? Have such patterns been longstanding or are they recent developments? Research on the effect of competition on the quality of care offered to economically and medically disadvantaged individuals, their access to care, and the willingness of hospitals to provide this care is worthy of study.

- Limits on Medicare payments to hospitals may lead to a more accelerated transfer of elderly patients from hospital care to longer term institutional settings or to home care and community-based alternatives. What has been the effect of unbundling, or the shift of services from the hospital to private offices, in transferring additional costs (e.g., number and frequency of claims processed) to payers other than Medicare? Has PPS provided increased opportunity for physicians to improve earnings by carrying out more diagnostic work

and offering more ancillary services in their private offices, rather than in the hospital? To what degree has the unbundling of services increased or decreased cost? To what extent are these cost-control strategies actually reducing national expenditures as distinct from Federal expenditures?

- What has been the response of hospitals to the rapid increase in HMOs and PPOs? Are hospitals lowering their charges to attract HMOs and PPOs, changing the way they treat patients, and/or adopting cost-reducing technologies? How does the competitive response of the hospital vary by its teaching status, geographic location, system affiliation, and type of ownership? Are hospitals increasing their management efficiency in response to increased competition?

- Have the costs of treating patients been reduced, or are fewer services provided on an inpatient basis and more on an outpatient basis? Since outpatient care under PPS continues to be reimbursed on a cost basis, there is a strong incentive for hospitals to provide more services on an outpatient basis. For example, the diffusion of magnetic resonance imaging (MRI) has been primarily as an outpatient service. The provision of MRI services on an ambulatory basis may reduce the cost of treating patients in the hospital because these services often are provided to patients before they are admitted to the hospital. What appears to be a decrease in health care expenditures in hospitals may simply reflect the provision of more services on an outpatient basis. Health services research that examines the costs of treating illness episodes both inside and outside the hospital is needed.

- Prospective payment for services provided to Medicare patients may have resulted in greater sensitivity by hospitals to the costs of providing care and related resource allocation. More elaborate computerization and monitoring of costs by hospitals imply greater internal control and management leverage within hospitals. To what extent and in what manner has prospective payment led to tighter hospital controls over the modes of physician practice and referral patterns? For many hospitals, PPS meant more revenue from Medicare. How have these hospitals responded, and how is that response potentially influenced by the degree of competition in the market? How have the functions of teaching and research in hospitals been affected by prospective payment? What changes have occurred in hospital marketing policies and diversification, including linkages with other types of providers?

- In response to a reduction in demand because of increased cost sharing and less generous payment for services, physicians and hospitals may select the best paying patients, eliminate unprofitable services, or transfer patients with less adequate insurance coverage. Have providers attempted to win patients away from competitors with attractive "packaging" and marketing of services or other "entrepreneurial initiatives"? Have there been measurable shifts in the availability and types of services (both marginal and essential) according to the relative income and insurance coverage of the market? If some services are selectively reduced or expanded, are there certain types or characteristics of illness that are most affected or involved? What balance between preventive and therapeutic services will emerge in different market arrangements? How will health insurance shape or be influenced by these developments?

- How has the hospital sector adapted to an environment dominated by PPS and increased competition? PPS provides an incentive for hospitals to create "PPS-exempt" units such as drug abuse units because these units currently are reimbursed on a cost basis. The extent of the development of such units within hospitals needs to be studied. Research is needed on the purchase and control by hospitals of ambulatory surgical centers, urgent care centers, and other satellite facilities. How much of the growth in special services (e.g., mental health services and drug abuse treatment) within hospitals is due to the integration of existing service providers under their institutional or corporate structure, and how much is due to the creation of services? What proportion of these special services is provided on a staffed, in-house basis, and what portion is contracted out? What are the factors influencing that decision?

- Have cost containment and competitive pressures led hospitals and other providers to compromise the quality of care? To what extent and in which areas have such compromises occurred? What are the various effects of preadmission certification and of the requirement or encouragement for the provision of an increasing number of surgical procedures on an ambulatory basis?

Health Care Technology Assessment

NCHSR recently published a program note that describes research priorities in several areas of health care technology assessment. This RMF program note provides further background on technology assessment and presents some additional researchable issues in this area, emphasizing the use of cost-effectiveness (CE) and cost-benefit (CB) analyses.

Health care technology assessment, in its narrow sense, is the evaluation or testing of the safety and efficacy of a drug, device, medical regimen, or surgical procedure. In its broadest sense, health care technology assessment constitutes a comprehensive form of policy research that examines the medical, societal, economic, ethical, and legal consequences of health care interventions.

The testing of health care technologies traditionally has been confined to issues of safety, efficacy, and effectiveness. (Efficacy refers to use of technologies under ideal conditions; effectiveness refers to the use of technologies under average or actual conditions.) It is becoming more important, however, to determine whether the benefit of a medical procedure also "justifies" its cost.

The impact of a technology on the cost of health care is important, although it is not an explicit criterion for coverage by most third-party payers. CE and CB analyses may be used to help determine which technologies produce which benefits at what cost. CE and CB analyses are used by decisionmakers to choose among several courses of action. The primary difference between CE and CB analysis is that CE analysis measures costs in terms of dollars and benefits in nonmonetary units; CB analysis measures both costs and benefits in monetary terms. For instance, many CE analyses of technologies measure benefits in terms of years of life saved and compare alternative technologies according to their cost per year of life saved. CB analysis evaluates alternative courses of action based upon their cost-benefit ratio. Since CB analysis measures both benefits and costs in dollars, it may be used to compare any two projects, whereas CE analysis may only be used to compare projects with the same type of benefits.

Analysts face many problems in applying CB and CE analyses to technologies. They often are forced to make difficult assumptions about the benefits of a technology since there is rarely information available from randomized clinical trials. A further problem is that the benefit of a technology depends on factors, such as the quality of life, that often are difficult to measure.

Cost-effectiveness studies of new technologies pose special problems for analysts. Foremost among these is the lack of data. Estimates of the expected costs and benefits of a new technology frequently are derived from data generated at a few institutions. Because the benefit may be greatest when a procedure is performed by the medical team that developed the technology, estimates may be inflated. Cost estimates also may be inflated because costs at research oriented institutions often exceed the costs of similar services at institutions that are not research oriented.

In order to use CE analysis, the cost of a new technology must be estimated. In addition, the cost of substitute and complementary technologies should be estimated. Cost data may be acquired from researchers, insurers (e.g., Medicare, Blue Cross/Blue Shield, and the Health Insurance Association of America), drug and device firms, trade organizations, and published documents (e.g., the Red Book lists drug prices compiled by IMS America, Ltd.). For instance, the cost of pancreas transplants might be estimated from data provided by one of the institutions where these transplants are performed. Cost data on percutaneous transluminal angioplasty (PTA) might be estimated from data collected at specific institutions or from data provided by insurers; data on the cost of streptokinase may be obtained directly from purchasers of the drug. The more widely that procedures are used, the more

likely it is that data may be obtained from insurers and sources other than specific institutions. For procedures that are not widely used, the researchers developing the technology may be the only source of data. Data on the cost of alternative treatments usually are available from insurers because such alternatives generally are accepted as common methods of treatment.

The net cost of a technology includes the cost of the procedure itself, savings in medical costs because of averted illness, and the cost of induced procedures. The cost of a procedure should reflect incremental costs (not the average cost). If facilities are already in place to perform a procedure, the cost of the procedure would include only the variable costs of production. Estimation of savings in medical costs for averted illness normally involves a comparison of the cost of the new technology to the cost of alternative technologies. The cost of induced procedures is important in the analysis of diagnostic technologies (e.g., the cost of electronic fetal monitoring should reflect the cost of the increased number of unnecessary cesarean sections associated with that procedure).

The only available data often are charge rather than cost data. Charges for hospital services generally are above costs and reflect arbitrary accounting conventions and efforts to maximize reimbursement. The professional fees set by physicians may vary according to who is paying the bill, and these charges are often unavailable to analysts. Consequently, analysts who are unable to measure the true costs of a technology often are forced to estimate the cost of a technology. For example, costs of established technologies might be used to estimate the cost of similar new technologies. The hospital costs of a kidney transplant could be used to help estimate the hospital costs of a pancreas transplant, and physician charges for a kidney transplant could be used as an estimate of the costs of physician services for a pancreas transplant.

It is clear that there are major methodological limitations that affect the study of the impact of health care technology on social costs and benefits. There are several methodological issues that limit the use of CB and CE analyses in decisionmaking, as well as more general issues in health care technology assessment, that merit further research:

- Means are required to better associate specific outcomes with specific and multiple diagnostic tests (the latter used for many different purposes). New efforts also are needed to deal with problems of data aggregation. How can different indicators of health status be combined into a single, meaningful measure? How can the costs of technology be attributed properly to product development, equipment manufacture and use, and individual procedures?

- What are the conceptual and methodological problems involved in making technology assessment techniques and activities more sensitive to specific age groups at risk? For example, CE and CB analyses often are inadequate in the way they measure the costs and benefits of medical technologies applied to the elderly (i.e., they often do not include the benefits experienced by family members and other informal care givers).

- Are there optimal rates of the diffusion and obsolescence of innovation? When is it cost effective to introduce a new technology? What are the financial incentives and behavioral factors involved in physician and institutional adoption of medical and surgical techniques? Studies should investigate the effects of organizational variables, market forces, government regulations, and industry investment in research and development on the course of diffusion and the rate of transfer of new health care technology.

- All assessment activities entail the expense of data acquisition and analysis. Do the social benefits of health care technology assessment at least equal the costs of the assessment? What is the optimal timing for technology assessments to be carried out?

- How has sensitivity to cost affected the use of specific technologies in the delivery of health care services for the indigent population? Have differences in the use of technology for patients with different levels of insurance and ability to pay affected the outcomes of care for these patients?

- How have the adoption and diffusion of new technologies (e.g., extracorporeal shock wave lithotripsy, positron emission transaxial tomog-

raphy, and magnetic resonance imaging) affected the productivity, incomes, and specialty mix of physicians?

- The measurement of outcomes associated with interventions that enhance the quality of life requires empirical study of the tradeoffs between various health states.
- In assessing the benefits of technology, what is the value of diagnostic information in reducing patient anxiety or increasing satisfaction?

Alternative Delivery Systems

The current marketplace for health care is characterized by new and rapidly developing delivery systems and cost management. Although the medical care system is composed predominantly of independent providers, the corporatization of medical care has become a reality in the 1980s. The effects of these delivery system changes on cost, quality, and access to care are debated by public policymakers and private purchasers of health services. While the research findings are more definitive in some areas (e.g., multihospital systems), they are only suggestive in others (e.g., freestanding urgent care centers). Systemic changes in the delivery of health care services which involve researchable issues include the development and growth of:

- Health maintenance organizations (HMOs)
- Preferred provider organizations (PPOs)
- Ambulatory surgery and freestanding emergency/urgent care centers (FECs)
- Multihospital systems (MHSs)

Health maintenance organizations—HMOs deliver a specified set of health care services to a voluntarily enrolled group of persons in return for a fixed periodic prepayment without regard to the actual amount of services delivered. HMOs appear to have lower rates of hospitalization and lower total expenditures for their members than are found in the fee-for-service sector. What is striking in the 1980s is the acceleration in the number of HMOs and their membership. There were 33 HMOs serving about 3 million enrollees in 1970 (less than 2 percent of the population). By September 1987, there were 662 HMOs serving 28.8 million people (over 11 percent of the population), an average annual rate of increase in enrollment of 14.2 percent between 1970 and 1987. In 1986, 47 percent of HMO enrollees were in for-profit HMOs.

The tremendous growth in HMOs can be attributed to several factors. For one, the percentage of Fortune 500 companies offering an HMO option to their employees increased from 76 percent in 1982 to 82 percent in 1983. Additionally, a portion of this accelerated rate of growth stems from the Tax Equity and Fiscal Responsibility Act of 1982 which provided increased incentives for Medicare beneficiaries to obtain their care from prepaid health plans.

There are several researchable issues concerning HMO performance:

- What is the relationship between HMO market share and the expansion of benefits by traditional insurers, the utilization of hospital services by non-HMO members, and the cost of care?
- There is continuing debate about the effect of adverse selection (the choosing of a health plan on the basis of the individual's expected use of services) on the utilization and cost patterns of HMOs. Further study of possible biased selection is required in order to more accurately measure the cost and quality effects of HMOs.
- Do some forms of HMOs (e.g., for-profit vs. not-for-profit or an individual practice association vs. staff model) operate more efficiently than others? What factors account for the greater efficiency (e.g., the mix of medical personnel and performance monitoring)?
- How do physician incomes vary among different practice arrangements? What types of physicians are most likely to join HMOs? If physicians who are conservative users of medical services are more likely to join HMOs, then some of the savings attributable to HMOs may not be due to inherent efficiency of the HMO but to the type of physician attracted to HMOs.
- How does the diagnosis- and procedure-specific mix of services provided by physicians in HMOs

differ from the mix of services provided by physicians in the fee-for-service sector? Some physician members of HMOs are paid on a capitation basis for their services. What are the differences in the quantity, mix, and timeliness of services provided by physicians who are paid on a fee-for-service basis and by physicians who are paid on a salary basis? What is the effect of capitation arrangements on the quality of care provided, as measured by the health status of patients? How do other plan characteristics, such as utilization review programs, affect the quality and quantity of care delivered?

- What is the effect of HMO copayments or deductibles on either the decision to join an HMO plan or the utilization of services?

Preferred provider organizations—PPOs may be a delivery system or a contractual arrangement between providers and third-party payers. The providers agree to deliver services to a specific group of patients, usually on a discounted fee-for-service basis. Subscribers generally are employees of a firm and are given financial incentives (e.g., reduced copayments) to use the preferred providers. The employees, however, retain the right to use other providers. Providers are promised a larger pool of patients and more rapid payment of claims. PPOs rely on utilization review as the primary cost-control mechanism. The growth of PPOs has been phenomenal. In 1984, an estimated 1.3 million persons were in a health plan that included a PPO. This rose to 17 million persons in 1986.

Empirical research on PPOs of interest to NCHSR includes:

- What is the impact of PPOs on health expenditures by participating patients and employers? Are the practice patterns of PPO providers more cost effective?

- If young, healthy patients or patients who use low-cost providers self-select into PPOs, competing health plans will experience increases in costs, and there may be no systemwide savings. What is the shift of patients (types of patients and diagnoses) to PPO providers? What is the response of providers? Do preferred providers "cost-shift" to their non-PPO patients, or do they carry over a conservative practice style? Do nonpreferred providers respond by reducing charges and services per patient, or do they expand their services per patient?

- To what extent and how quickly do competing insurers and third-party administrators react to PPOs by increasing their cost-control efforts directed at providers (e.g., improving their utilization review programs and changing their methods of reimbursing providers)?

- What techniques and data do PPOs use to identify efficient providers? How are practice styles of providers monitored to assure appropriate provision of care?

Ambulatory surgery—This type of surgery can be performed in hospital-based units integrated into the inpatient surgery department, hospital-based units that are physically and financially autonomous, and freestanding ambulatory surgery facilities. Ambulatory surgery also may be performed in physicians' offices, hospital outpatient and emergency departments, and walk-in clinics. These settings differ in locational characteristics, costs, and services offered, but they all provide an alternative choice for the consumer and increased competition for the hospital inpatient facility.

During the 1970s, it was estimated that 20-40 percent of the 21 million surgical procedures performed each year could be done on an ambulatory basis. As a result of recent developments in laser technology, fiber optics, and anesthesia techniques, this proportion is higher. By 1986, 40 percent of hospital surgical procedures were performed on an ambulatory basis, including 6 of the 10 most common inpatient procedures.

In 1980, 75 percent of non-Federal hospitals in the 134 largest SMSAs offered ambulatory surgery services. There were 303 freestanding ambulatory surgery facilities in 1984. This number, however, would be significantly higher if specialty facilities, such as ophthalmic and plastic surgery centers, were included. Freestanding ambulatory surgery facilities have grown as a result of cost-containment pressures, increased convenience for the patient and provider, and changes in insurance coverage that encourage the use of alternative settings for surgery.

There are several health services research questions concerning the growth and locational patterns of ambulatory surgery facilities:

- How many ambulatory surgery centers are operating (whether hospital-based or freestanding)? What types of procedures are performed? What type of licensing and accreditation procedures are in place by State? What is the effect of these on the cost and utilization of these facilities?
- How are various reimbursement changes (e.g., PPS under Medicare) and new competitive pressures affecting the growth of ambulatory surgery facilities? What is the market response of other providers (e.g., inpatient surgery units and surgeons) to the development of ambulatory units? Has surgical demand shifted to new ambulatory settings, or is there an overall increase in the demand for surgical services?
- What is the economic impact of ambulatory units on the consumer and payer? Does the entry of ambulatory units stimulate higher or lower prices, nonprice competition, or provider-induced demand? How does the introduction of an ambulatory surgery unit in an area affect the average cost of inpatient surgery?
- Are there differences in diagnosis-specific outcomes between freestanding ambulatory units, hospital-based units, and inpatient surgery departments after controlling for patient mix, case-mix, and case severity?
- To what extent do freestanding ambulatory units serve disadvantaged population groups, such as indigent or Medicaid beneficiaries? Historically, hospitals have subsidized the care of the needy using income from paying patients. If a large number of paying patients now receive care in nonhospital settings (such as ambulatory surgery facilities), will hospitals still have the resources to care for the needy?

Freestanding emergency/urgent care centers—FECs provide episodic emergency care for minor emergency problems (e.g., sore throats and lacerations) 7 days per week. They generally are open for limited hours and do not receive ambulance patients. It has been estimated that 70-85 percent of hospital emergency room visits are for nonurgent health problems that could be treated in less intensive settings. The annual growth rate of FECs was 71 percent during 1978-84. There currently are about 2,000 facilities operating in the United States. Factors behind this growth include increased cost consciousness, greater convenience, and competition among an increasing number of physicians for patients.

A clear definition of FECs is needed so that accurate, complete data on the extent of FEC presence can be compiled. Cost comparisons between FECs, hospitals, and physicians' offices usually have been based on local case studies that may not be generalizable. A nationally representative sample would provide better data to investigate differences in costs.

Research on FECs that is of interest to NCHSR includes:

- Are FECs lowering expenditures by substituting less costly ambulatory care for more expensive inpatient care? Are FECs increasing expenditures by serving patients who would not otherwise have received care? What are the competitive effects of FECs on area per capita health care costs?
- What are the effects of increased competition by FECs on hospitals and physician offices in terms of cost, utilization, access, and quality of care? Is there any change in the availability or provision of services to the indigent or Medicaid beneficiaries as a result of FEC competition?
- What are the State licensure and accreditation requirements for FECs, and how do these requirements affect the cost and quality of care provided by FECs?

Multihospital systems—MHSs are organizations that own or operate two or more hospitals. About 44 percent of hospitals in the United States were part of an MHS in 1986. One of every six hospitals and nearly 12 percent of all hospital beds were in an investor-owned MHS in 1986. During 1975-82, all MHS hospital beds increased at an average annual rate of 3 percent, compared to a 7.6 percent annual rate of growth for investor-owned MHS hospital beds during 1977-84. Systems have been

growing largely through the acquisition of financially troubled hospitals. The vertical growth of systems, through the purchase of facilities such as freestanding nursing homes and psychiatric hospitals, has been rapid. Systems also are developing linkages with insurance companies.

The major advantage of MHSs over independent hospitals appears to be a preferred position in the market for capital. Systems treat comparable numbers of Medicare, Medicaid, and "medically indigent" patients as other hospitals in their market area, but tend to locate in areas with few Medicaid or uninsured patients. There is little evidence regarding differences between MHSs and independent hospitals with respect to the quality of care delivered. The cost of inpatient care was higher during the pre-PPS era of cost-based hospital reimbursement in MHSs, especially in for-profit systems. For-profit systems have concentrated in high-growth "Sun Belt" States with favorable regulatory environments and charge-paying Blue Cross plans.

Future research should examine competitive effects on other area hospitals; compare system hospitals with dissimilar as well as similar hospitals; document behavior of systems under different reimbursement systems; and improve measures of quality, access, and technical efficiency. MHS studies should distinguish among for-profit and not-for-profit systems as well as account for other system characteristics.

Specific health services research questions include:

- What is the competitive impact of the entry of a system hospital on other area hospitals? How do charges, expenses, professional staffing, acquisition of technology, availability of ambulatory services, payer mix, availability of charity care, and quality of care change with entry?
- How have MHS pricing, staffing, and capital acquisition policies changed under PPS?
- What are the differences in diagnosis-specific outcomes between system and independent hospitals, considering the profit orientation of the hospitals and systems? What differences are there in case severity between them?
- How has the growth of MHSs and other delivery systems (e.g., HMOs, PPOs, and FECs) affected the extent and nature of services available to the indigent?

Health Care and the Elderly

An increasing number of people are reaching very old age (over 85 years). There were 2.4 million Medicare enrollees over 85 years of age in 1984. The population over 85 is expected to increase to 3.5 million by 1990 and to 7.7 million by 2025. Since chronic conditions are more prevalent in the over-85 population, the need for institutional and community-based services for these individuals is likely to grow.

The ramifications of an older population for the organization and delivery of health care services are manifold. For example, hospitals have incentive to maintain or enhance revenues by diversifying into other forms of transitional care. A larger elderly population implies that there are more young elderly who are available to serve as caregivers in informal care settings. Moreover, technological innovation in diagnosis and treatment affects the demand and utilization of services by the frail and functionally impaired elderly. For example, a breakthrough in the treatment of Alzheimer's disease would affect the demand for nursing homes.

More than 71 percent of the frail elderly population resides in the community; the remaining 29 percent is in nursing homes. Over $30 billion was spent for nursing home care in 1984, about 9 percent of national health care expenditures. Almost half of the expenditures for nursing home care is publicly financed by Medicaid. Federal, State, and local Medicaid spending for nursing home care was $16.5 billion in 1984. States have attempted to reduce their long-term care (LTC) expenditures by restricting the supply of nursing home beds, increasing the use of patient assessment tools prior to entry to homes, shifting to prospective reimbursement, and emphasizing home and community-based services as alternatives to nursing homes.

Hospitals and health systems are developing a wide range of noninstitutional services through corporate restructuring and vertical integration of health care

services. This is partly in response to the financial incentives under PPS to reduce the resources used in hospital care. Information and referral services, emergency response systems, home health services, and skilled nursing facilities are the most frequently offered services for the elderly by hospitals. A recent AHA survey found that 66 percent of 3,529 hospitals surveyed planned to develop or expand services for the elderly during 1987.

NCHSR recently highlighted the need for research on home care services for the elderly (NCHSR program note, *Research Agenda on Home Health Care,* September 1986). At this time, NCHSR is interested in studies that address a variety of questions on the economics of health care and the elderly. Investigators are encouraged to use existing long-term care data bases where appropriate to study the following issues:

- What effect has the reduced growth of nursing home beds had on access to care? Have the elderly experienced greater hospital readmissions in States that have a shortage of nursing home beds?

- What are the main determinants affecting admission to nursing homes? How important are socioeconomic characteristics, payer status, functional status, and the living arrangements of the elderly individual in determining admission to the nursing home?

- How effective has case-based reimbursement been in containing nursing home costs? How do reimbursement systems affect the admission of patients with Alzheimer's disease?

- What shifts in the mix of services and patients have occurred in nursing homes? Has unbundling shifted services out of the hospital to the nursing home? Have the socioeconomic and demographic characteristics of patients in nursing homes changed since the implementation of PPS under Medicare?

- How do individuals pay for nursing home care? Because of the high cost of nursing home care, individuals tend to "spend down" their assets and become eligible for Medicaid. How does this "spend down" process vary by State and by socioeconomic and demographic characteristics of the patient?

- How have economic incentives affected the access of recently discharged Medicare patients to skilled nursing facilities (SNFs)? How has PPS affected patterns of admissions to LTC facilities with respect to patients with short stays versus those with long stays?

- What are the differences in the cost and outcome of nursing home care for patients with Alzheimer's disease and related dementias, as compared with other care settings, pre- and post-PPS?

- What are the costs of formal and informal care for individuals with Alzheimer's and related dementias? What impediments exist to the reimbursement of services related to Alzheimer's disease? What State initiatives exist to provide services to individuals with Alzheimer's disease? Are these services financed through public or private funding sources?

- What are the economic and nonfinancial burdens on patients and families resulting from early discharge of the elderly patient from the hospital?

- How much competition is there for patients among hospital-affiliated postacute services, community-based services, and HMO arrangements? What form does this competition take (e.g., price discounting, greater benefits)? How active are hospitals in establishing case-management programs for the elderly? How are these hospital-based programs financed, and do they generate financial benefits? What is their effect on community-based case-management programs?

- Private expenses for long-term care services for the elderly with chronic physical and mental disabilities are extensive. Discussion about the problems of financing long-term care services would benefit from additional study on the sources and amounts of private long-term care expenses. There also is a need for more research on private and public approaches for financing and insuring LTC. Exploration of risk-selection rating, product development, and marketing costs of LTC insurance would be useful.

- What are the quality, cost, and outcome differences, pre- and post-PPS, for discharged patients who receive postacute care in hospitals, SNFs, and special rehabilitative facilities?

Cost and Financing Issues of AIDS

Acquired immune deficiency syndrome (AIDS) is a major health problem expected to consume large amounts of health care resources. As the epidemic progresses, serious cost and financing considerations need to be addressed.

Statistics from the Centers for Disease Control (CDC) indicate that over 31,000 persons have died from AIDS. As of March 14, 1988, 56,212 cases have been reported. In addition, it is estimated that approximately 50,000 cases of AIDS-related complex (ARC) have occurred.

Given definitional and reporting problems, different estimates on population risk are cited. The most frequently cited estimate is that 1 million Americans are infected with the disease. Projections indicate that 179,000 people will die from AIDS in this country by the year 1991, that the disease will have afflicted approximately 270,000 Americans, and that 74,000 cases and 54,000 deaths are expected in 1991 alone. Others are less optimistic. Given evidence that at least 25 to 50 percent of those infected will develop the disease in 5 to 10 years, more recent projections place the number of AIDS victims to be between 400,000 and 750,000 by 1991.

The limited health services research on AIDS to date has focused on the costs and expenditures for treatment. Small sample sizes and the newness of the disease have made it difficult to estimate current and future costs. The problem is further compounded by variations in treatment settings, treatment interventions, and population risk. Also, the different types of population groups most affected by the disease make it difficult to compute the indirect costs of AIDS (i.e., the loss of income and productivity resulting from morbidity and mortality).

Based on the above factors, wide variations in the cost of treating the illness have been reported, ranging from a low of lifetime hospital costs of $27,571 (1984 dollars) in one San Francisco study to a high of $147,000. Scitovsky *et al.* (1986) have estimated that the average national lifetime costs in 1984 dollars ranged from $60,000 to $75,000. Another more recent study places national average cost at around $94,000. Based on these variations, finding cost-effective means of delivering care is important. However, there is little knowledge on the availability of lower cost care and the community support services needed to enhance it.

Extrapolating from the current cost situation, it is projected that the estimated $1.1 billion in personal medical care costs for treating AIDS in 1986 will increase to $8.5 billion in 1991. The personal medical care costs of AIDS are estimated to rise from 0.3 percent of total personal health care expenditures in 1986 to 1.4 percent in 1991.

More dramatically, indirect costs of the illness, estimated at $7.0 billion in 1986, are expected to increase to $55.6 billion in 1991. The indirect costs of the illness are expected to increase from 2.1 percent to 12 percent of all indirect costs attributed to all illnesses. Indirect costs (income/productivity loss due to morbidity and mortality) are likely to be a significant component of the total costs of AIDS for the homosexual population. Refinement and additional estimation of both indirect and direct costs of the illness are needed, given varying assumptions of the rate at which the disease spreads, definitions of the disease, and the available treatment modalities.

Both national and regional cost estimates are required. These estimates should account for variation in factors such as presenting diagnosis, stage of disease, risk group, ethnic group, and the health care setting.

The financial burden in underwriting the cost of AIDS is shared among Federal, State, local, and private sources of payment. This burden is likely to shift as the epidemic spreads. Informed policy requires data on the distribution of financial support and the effect of changes in reimbursement policy on the relative burden among various sources of payment.

Little information on the reimbursement and financing of care for AIDS exists. Currently, approximately 60 to 70 percent of daily hospital cost is reimbursed by third-party payers. Reimbursement

can be expected to vary regionally, due to State differences in both the availability and coverage of Medicaid for "medically needy" people. In addition, there are significant variations in the coverage of traditional insurance plans and in the availability of State risk pools.

There also is potential variation in the use of insurance and employment screening for AIDS, especially with regard to small-group or individual policyholders. As employers and insurers begin to screen directly or indirectly for seropositivity to AIDS, the fiscal burden of AIDS may be borne increasingly by the public sector. Congressional attempts to waive the 2-year "waiting period" for AIDS victims under 65 years of age to qualify for Medicare on the basis of disability may be successful. This would significantly increase the public role in financing health care for AIDS patients. On the other hand, recent Consolidated Omnibus Budget Reconcilation Act (COBRA) legislation mandates employers of 20 or more persons to continue medical insurance coverage for former employees for 18 months after employment cessation. This may help to assure some private support for AIDS victims who are forced to relinquish their jobs.

Given the complexities noted above, estimates of the percentage of the AIDS population covered by Medicaid range from 7 to 65 percent, by private insurance from 7 to 13 percent, and by Medicare from 1 to 3 percent. Estimates of the uninsured AIDS population range from 2 to 40 percent. According to the Health Care Financing Administration, State and Federal sources of Medicaid account for 23 percent of payments for the illness, and 2.5 percent of the Federal Medicaid budget will be devoted to AIDS by 1991. As in the case of cost, small area and population variations and projections, as well as changes in treatment protocols, dramatically influence the financial impact of the disease.

The identification of cost-effective ways for organizing, managing, and delivering health care services to AIDS patients is critical. Cost-effectiveness analysis, however, needs to distinguish costs from charges, consider severity of illness and quality of life, and use consistent measures of the relative effectiveness of different strategies for providing health care services.

Cost and financing issues also affect access to care. Any existing problems with respect to access to care are compounded by the peculiar characteristics of the disease and the population groups most currently affected by AIDS. AIDS patients are more likely to require public assistance because the debilitating nature of the disease often dramatically restricts employment opportunities. The disease is concentrated among minority population groups who are relatively poor. The infectious nature of the disease may lead to certain limitations on the willingness of providers to give appropriate and sustained treatment.

NCHSR is interested in studies that will explore the following questions:

- What are the projected national costs (both direct and indirect) and expenditures for AIDS? How do these estimates vary with changes in assumptions concerning the extent of the disease, population groups affected, and treatment protocols used?

- How are various sources for the financing of AIDS care projected to change? How is this expected to vary by geographic area?

- What is the cost effectiveness of various treatment modalities (e.g., drug therapies, intensive care, home care) and prevention strategies (e.g., patient and practitioner education, screening programs)? Effectivness can be measured in terms of the amount of time actively engaged in work *after* diagnosis for those with AIDS or related conditions or in terms of changes in the behavior of individuals who have not been infected but are in a high-risk group or setting.

- What is the variation in "costs" versus "charges" for the treatment of an episode of illness, including all types of care associated with it? Studies should distinguish costs from charges; assess the entire duration of an illness; and address the wide spectrum of services used including inpatient services, outpatient services, discharge planning, hospice care, long-term care, home care, community-based volunteer programs, psychiatric care and support services.

- How do costs for the treatment of AIDS vary by region, risk factors, demographics (age, gender), and socioeconomic variables?
- What are the indirect costs of AIDS? How do they vary for different treatments, types of services utilized by patients, and population groups affected?
- How have "insurance pools," COBRA legislation, use of indirect and direct screening for AIDS by employers and insurers, and area-specific, mandated insurance coverage for at-risk populations affected the availability of insurance coverage for AIDS, ARC, and seropositive populations?
- What is the extent of unreimbursed care for AIDS, ARC, and seropositive patients? How are these costs absorbed, especially in areas with high concentrations of uninsured or inadequately insured patients?
- What services are available and used for the treatment of AIDS (e.g., acute hospital, outpatient, home health, hospice, long-term, and psychiatric care and voluntary support services)? How do these vary across geographic areas?
- How are various health care practitioners reacting to the AIDS epidemic in terms of their availability and willingness to treat AIDS? What roles have information on the risk of professional contact and the education of practitioners on the nature and treatment of the disease played in the willingness of providers to treat patients with AIDS and AIDS-related conditions? Do variations in the ability to exercise discretionary judgment in the decision to treat AIDS patients vary across employment settings and types of health professionals?

Consumer-Oriented Health Care

The emergence of informed consumer choice in the health care system is a cornerstone of procompetitive strategy. This strategy calls for decentralization, a transfer of health care decisionmaking from the private health professional to the consumer. A shift in the governance of health care to the consumer is seen as characteristic of the emergence of the market alternative as a viable option to professional control and centralized decisionmaking.

Strategy for a more competitive market requires the removal of barriers to choice and the creation of incentives for a more active consumer role in health care. Barriers to choice include limits on consumer access to "corporate agents" that are typically identified (e.g., professional standards that constrain the hospital from intervening on behalf of the patient), public acquiescence in professional control (e.g., malpractice laws that enforce mandatory use of prevailing medical standards), health planning activities often "captured" by the industry, and hospital ratesetting that allows resource allocation to be controlled by the provider.

Recent changes in the market for health care services indicate that some decentralization in decisionmaking concerning the use of health care resources is occurring. These changes include prospective hospital payment and the accelerated growth of HMOs and PPOs. Related price discounts demanded by corporate health plans and insurers and shifts in power among hospitals, physicians, and third-party payers are seen as forces that will tend to enhance the role of the consumer in the health care system.

Further incremental change under procompetitive strategy requires new incentives for consumers to reexamine their options (e.g., further changes in tax subsidy for health insurance premiums), to improve the flow of information (e.g., disclosure of data on pricing and outcomes), to enhance the role of "corporate middlemen" by means of antitrust action (e.g., breakup of any collusion between insurers and providers), and to reduce governmental and judicial limits on consumer choice. The latter could include the use of vouchers in the purchase of medical care and judicial precedents that permit private contracts to deviate from "professional norms" of care.

Specific health services research issues and questions include:

- Has there been satisfaction by consumers with perceived changes in the organization, delivery, and type of medical care services they are receiving? Are patients shopping for the highest quality hospitals, and have providers been induced

to eliminate sophisticated services for which there is no real patient demand?

- How has the behavior of hospitals with respect to the availability and provision of services for different population groups been influenced by the degree of competition in the local market?

- Some regulations can lead to market distortions such as creating barriers to entry, shifting costs between buyers, or awarding monopoly power to some providers. To what extent do regulations pertaining to manpower (e.g., occupational licensure), institutions (e.g., nursing home standards), and the insurance industry (e.g., different benefit-premium standards) contribute to the increased costs of health care and reduce aggressive price competition in the market for health care services? In contrast, it may be necessary to implement certain regulations in order to stimulate "socially desirable" competition. What types of regulations may be required to achieve this (e.g., minimum benefit packages and community rating), and what impact will these regulations have on the organization and delivery of health care services?

- To what extent will monopsony power be exerted by consumer agents (e.g., HMOs and PPOs) in bidding for hospital services? Will the package of health care benefits negotiated in a more competitive market by corporate buyers be perceived by employees as more desirable in terms of availability, access, and quality of care?

- An increase in the supply of physicians may lead to more competition in the market for related health care services. This increase is not expected to be uniform across the country, across specialty, or over time. What will be the consequences for the price and use of physician services; for the growth of PPOs, HMOs, and other managed care systems; and for the nature, extent, and content of office-based visits?

- Recent research findings indicate that, in the period before PPS, nonprice competition among hospitals for physicians and their patients resulted in inefficient duplication of services. In some cases, this duplication may have led to lower quality of care because of a reduced volume of patients and related practice skills for certain surgical procedures in certain competing hospitals. To what extent has a more competitive market after PPS reduced this duplication of services and, in general, the role of nonprice competition ("medical arms race") by hospitals as a means to attract physicians and patients?

Application and Review Procedures

The extramural research program of NCHSR provides grant support for health services research and is authorized by Section 305 of the Public Health Service Act (42 USC 242c). Grants are administered under the Code of Federal Regulations, 42 CFR Part 67, and the Public Health Service Grants Policy Statement.

Applications may be submitted by any public or private nonprofit institution or unit of State or local government. Applications are to be submitted on Public Health Service Form 398, Grant Application, except for applications from State and local governments. The latter are required to submit Standard Form 424, Application for Federal Assistance (Nonconstruction Programs).

Application materials are available from:

Mr. John D. Gallicchio
Chief, Review and Advisory Services Program
National Center for Health Services Research and Health Care Technology Assessment
Room 18A-20, Parklawn Building
5600 Fishers Lane
Rockville, MD 20857 (Tel: 301-443-3091)

Application materials may be available from business or grants and contracts offices of academic or research institutions, and they also can be obtained from the National Institutes of Health (NIH), Division of Research Grants, (DRG), whose address appears below.

The applicant should check the box on the application form's face sheet (line 2) indicating that the proposal is in response to this program note and print (next to the checked box) "NCHSR Role of Market Forces." The applicant also should enclose a cover letter so indicating.

The schedule for submission and review of the application is:

NIH/DRG Submission	Study Section Review	Council Review	Earliest Start Date
June 1	October	February	March 1
October 1	March	June	July 1
February 1	June	September	September 30

The original and six copies of the application should be sent or delivered to

National Institutes of Health
Division of Research Grants
Room 240, Westwood Building
5333 Westbard Avenue
Bethesda, MD 20892

All NCHSR research grant applications are reviewed for scientific and technical merit by a review panel or study section comprised of non-Federal scientists. Each application will be reviewed by the appropriate NCHSR study section according to the following criteria:

- the significance and originality of the project from a scientific and technical viewpoint
- the adequacy of the methodology proposed to carry out the project
- the availability of data and the adequacy of the data collection plan
- the appropriateness of the work plan and schedule for organizing and completing the project
- the qualifications of the principal investigator(s) and staff
- the adequacy of the facilities available to carry out the project
- the reasonableness of the budget
- the adequacy of the proposed protection of human and animal subjects

Applications dealing with technology assessment and exceeding $50,000 in direct costs require consultation by NCHSR with the National Advisory Council on Health Care Technology Assessment before funding decisions are made.

If the proposed projects are no more than 2 years in length, require no more than $50,000 in total direct costs for the entire project period, and deal with AIDS, variations in medical practice/patient outcomes, or technology assessment, then these applications are eligible for accelerated review. Such applications may be sent directly to NCHSR. Because of a modified review process that involves both Federal and non-Federal experts, NCHSR is able to notify applicants of funding decisions within approximately 120 days. Deadlines for receipt of these applications at NCHSR are the first day of the following months: January, March, May, July, September, and November.

Further information on researchable issues identified in this program note may be obtained from:

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